

IN THE SPECIFICATION

Page 1, line 17, replace the paragraph with the following amended paragraph.

In listening devices of this kind it is a problem that the microphones need to be closely matched in order for a possible directional computational algorithms to function optimally. In order that the microphones stay matched over a long period, an automatic matching process is introduced. Here the signals from the microphones are continually analysed to ensure that over time there is no big difference in the output level from the microphones. In such listening devices it is also a problem that when the casing is accidentally touched or touched when applied to the ear, very loud sound output levels may be produced as the microphones are very sensitive to noise propagated through the material of the casing walls.

Page 1, line 25 to page 2, line 11, replace the paragraphs with the following amended paragraphs.

If substantial differences in the input to the microphones should occur, this might corrupt the outcome of the automatic matching process. Further, it has been discovered that such large differences are most likely to coincide with the occurrence of large and unpleasant noises which the user would prefer not to hear, like the noise which is produced when the casing is touched by the user. In hearing aids a large gain or amplification of the audio signal is introduced to compensate for the

hearing loss of the user. This amplification amplifies all signals, wanted as well as non-wanted. The wanted signals usually originates some distance from the hearing aid and arrives travelling through the air. Noise from touching the hearing aid is very unpleasant since it results in a loud output signal from the hearing aid because of the frictional resistance, the banging from the acceleration of fingers, ~~et~~etc. The noise increases as the origin of the noise moves closer to one of the microphones in a multi-microphone hearing aid.

To overcome ~~to~~the above problem the ~~inventions~~invention provides a method for processing the signals from two or more microphones in a listening device whereby the signals from the microphones are analyzed in order to detect when the casing is touched, whereby changes in the signal processing are effected whenever touching of the casing is detected.

Page 4, lines 6 to 17, replace the paragraph with the following amended paragraph.

Initially a mean value of the energy in each of the two channels is calculated. One way to detect whether a signal originates from a touching noise is to analyse the difference or ratio between the energies in the two channels. If the ratio makes a fast shift, this is an indication that the signal originates from touching noise. When the presence of such a signal is determined a value within the DSP is shifted, and other parts of the

DSP unit may react to the shift of this value. One reaction could be to stop the automatic procedure for amplitude and/or phase matching of the two microphones. In this way it is assured, that the microphone matching procedure is not influenced by the large differences in amplitude and/or phase which will occur when the hearing aid shell is ~~touches~~ touched. This may be extended such that the time pattern of the ratio between the two signals is determined for a given length of time. By doing this it becomes possible to determine the occurrence of repeated touching of the hearing aid. This could be used for communication of user input to the hearing aid. An example of user input could be program shifts or control of the volume.

Page 4, line 32 to page 5, line 20, replace the paragraphs with the following amended paragraphs.

At the casing a sound generating element can be arranged, which when touched provides a well defined sound impulse to the casing. This sound impulse may be detected through the ~~analyses~~analysis of the signal from the microphones. In this way the user can interact with the listening device through the microphones of the device in a secure manner. The advantage here is that the listening device can be made without an ~~electro~~electro-mechanical button which is otherwise usual. The absence of the electro-~~mechanical~~mechanical button is advantageous as the electrical

connection thereof to the signal processing device then becomes superfluous.

The analyse block determines whether the signal from the microphone originates from touching the casing or from a sound source in the environment. The input to the analyse block is an estimate of the power in each channel. On figure 2 the time related ratio between the two microphone channels is shown, whereby the vertical axis is the ratio: $Ch1/Ch2$ and the horizontal axis is time. If the signal is a normal acoustic signal, then the ratio is constant over a short-term period, and this is shown as the horizontal line in the graph. If the environment is relatively quiet, the noise from touching the microphone in channel I results in the ratio shown in fig. 2. The peak in fig. 2 originates from noise generated by touching of the casing material whereby a sudden change in the ratio between the energy contents in the two channels will occur which is registered by the analyse block. If the rate of change is above a given threshold, and at the same time the size of the value of $Ch1/Ch2$ is above a given threshold, it is determined that the hearing aid casing is touched.